

A preliminary, multidisciplinary investigation into the
performance of professional referees in the
Australian National Rugby League

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“Get em’ onside!”

Everyone – at any rugby league game, anywhere.

Declaration

I certify that the work contained in this thesis has not been previously submitted either in whole, or in part, for a degree at the University of Technology Sydney, or any other tertiary institution.

I also certify that this thesis is written by myself, Matthew Jeffriess. Any assistance that I have received in my research work and in the preparation of this thesis has been acknowledged. Additionally, I certify that all informational sources and literature used to complete this thesis are indicated throughout.

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Production Note:

Signature removed prior to publication.

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12th August 2020

Date

Preface

This thesis for the degree of Doctor of Philosophy is in the format of collated manuscripts intended for publication and abides by the ‘Procedures for Presentation and Submission of Theses for Higher Degrees – University of Technology, Sydney; Policies and Directions of the University. All manuscripts included in this thesis are closely related in subject matter and form a cohesive research narrative.

Based on the research design and data collected by the candidate, four manuscripts have been prepared for submission into peer reviewed journals. These papers are initially brought together by an Introduction, which provides background information, defines the research problem and the aim of each study. A Literature Review then follows to provide an overview of previous knowledge regarding Factors affecting training, evaluation, and performance of professional referees in the Australian National Rugby League (NRL). The body of the research is presented in manuscript form (Chapter Three to Chapter Six), in a logical sequence following the development of research ideas in this thesis. Each manuscript outlines and discusses the individual methodology and the findings of each study separately and includes all referencing specific to each manuscript in each chapter. The General Discussion chapter provides an interpretation of the collective findings, makes some practical recommendations, and acknowledges the limitations from the series of investigations that comprise this thesis. Finally, a Summary and Recommendations chapter presents the conclusions from each project and directions for future research to build on the findings of this thesis are suggested. The APA 6th reference style has been used throughout the document and the full reference list is at the end of the thesis.

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To Cameron Black, who started me on this ride - while it has had its share of “Turbulence” you have been a mentor and a mate. Thank you mate.

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Abstract

Sports officials are critical constituents to team sports competition, of which professional rugby league is no exception. Successful performance in sports officiating involves a complex interplay of components including, but not limited to; physical, technical, and perceptual-cognitive factors. When comparing literature on sports officiating there is a clear paucity of research investigating the performance of rugby league referees. As a result, there is a deficiency in evidence-based practice when evaluating and training rugby league referees. This is of concern given the prominence of the elite rugby league competition has on the Australian sporting landscape. Given the scarcity of research into rugby league referees this thesis adapted a conceptual model rugby union referee performance as a framework for a preliminary, multi-disciplinary investigation into factors that affect performance of elite rugby league referees. This thesis contains four studies with the aims of; (1) improving understanding of the physiological demands of the current 2-referee model utilised in the elite rugby league competition in Australia, and, (2) the contextual factors that affect physical performance of the referees in the 2-referee model. It is widely reported in the literature that the physical aspect of refereeing is only one component of referee performance, therefore, in addition to physical performance, the thesis also aimed to (3) examine to what extent other measurable referee performance variables, including technical psychological and perceptual-cognitive, contributed to rugby league referee performance evaluation. Finally, the thesis aimed to (4) create an ecologically valid decision-making task for referee decision making performance, and examine perceptual cognitive mechanisms underpinning elite referee decision making.

Study One identified between-role differences for match-activity profiles for the two on-field referees (head vs. assist) under the current referee model. Study Two expanded on this research

to investigate how contextual factors, specifically referee match experience and referee fitness effect the match-activity profiles of elite rugby league referees. The findings highlighted the importance of cardio-vascular fitness for elite rugby league referees and the effects of referee match experience on movement and positioning. Combined, these studies further the understanding of how the referee roles differ and provide supporting evidence to suggest the development of role specific training programs. Study Three identified that no movement characterises positively factor into the evaluation of referee performance. Rather, referee penalty accuracy was found to contribute most to evaluation score. This highlights the importance of decision making to referee on-field performance. Finally, the Study Four created a valid, reliable, domain specific decision-making test for rugby league referees. Additionally, this study found that although referees outperformance non-referees on the decision-making task, they do not employ different gaze strategies to the control group when making decisions. Results suggest referee have greater ability to process visual information and have increase procedural knowledge when applying the rules of rugby league.

In combination, the studies within the thesis provide insights into multi-factorial nature of rugby league referee performance. The results give evidence for development of appropriate physical training programs, while highlighting the importance of non-physical factors, such as perceptual cognitive skills, on referee performance. Furthermore, the thesis suggests that referee performance may be improved by the deliberate practice of referee domain-specific, perceptual-cognitive tasks in conjunction to role specific physical training programs. The unique, ecologically valid decision-making task had the potential to be utilised and future research investigations into factors affecting decision making of elite rugby league referees for talent identification purposes.

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